

Listing of Claims

Claim 1 (Currently Amended): A compound comprising a photoinitiator joined to a hydrophilic carrier component, the hydrophilic carrier component comprises a monomer, oligomer, polymer, plasticizer or surfactant.

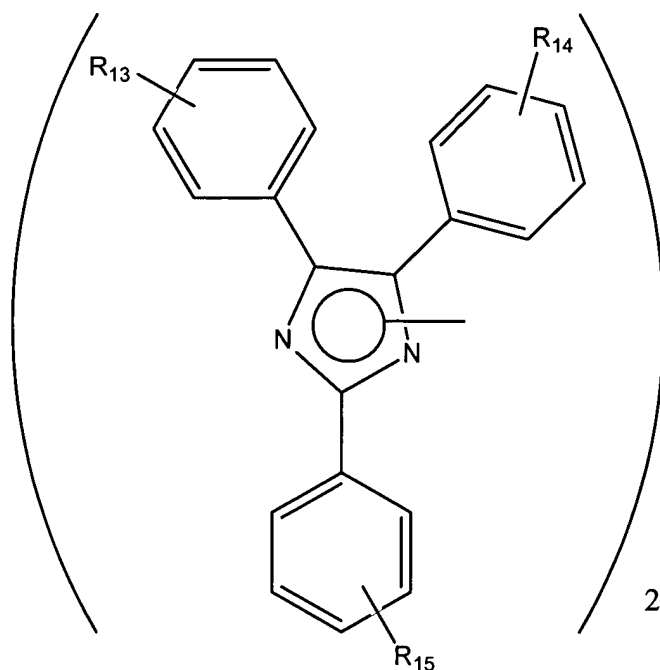
Claim 2 (Canceled).

Claim 3 (Currently Amended): The compound of claim-21, wherein the monomer is an acid functional monomer or a non-acid functional monomer.

Claim 4 (Currently Amended): The compound of claim-21, wherein the oligomer is a urethane oligomer.

Claim 5 (Original): The compound of claim 1, wherein the photoinitiator comprises an imidazole dimer, a benzophenone, an acetaphenone, an anthraquinone, a naphthaquinone, or a triazine-based compound.

Claim 6 (Original): The compound of claim 5, wherein the imidazole dimer is a hexaarylbiimidazole of the following formula:



wherein R<sub>13</sub>, R<sub>14</sub> and R<sub>15</sub> are the same or different and comprise hydrogen, unsubstituted or substituted alkyl, unsubstituted or substituted aryl, alkoxy, aryloxy, hydroxyl, aminyl, carboxyl,

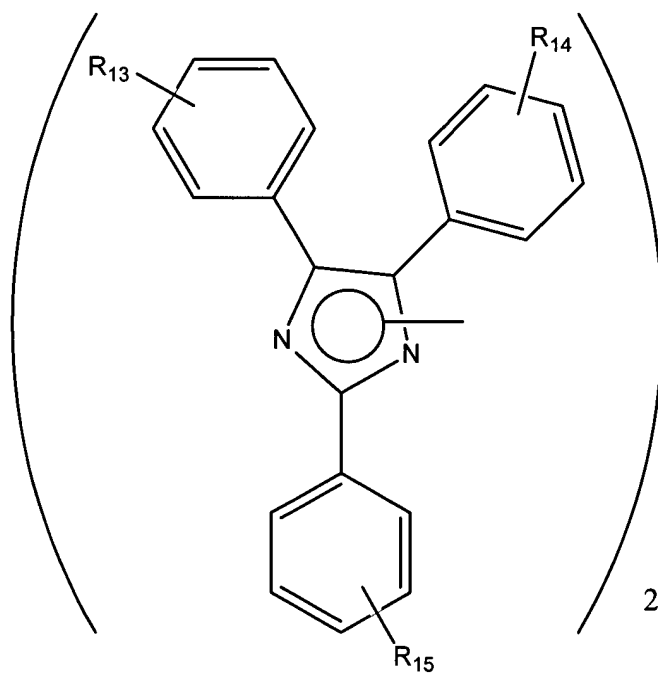
ester, thio, isocyanate,  $-N(CH_2OCH_3)_2$ , hydroxyalkyloxy or alkylthio with the proviso that at least one of  $R_{13}$ ,  $R_{14}$  or  $R_{15}$  is a reactive group that undergoes an addition or a condensation reaction with a reactive group of the carrier component to join the carrier component to the imidazole dimer, and  $R_{15}$  also may be a halogen.

Claim 7 (Original): The compound of claim 6, wherein  $R_{13}$  or  $R_{14}$  comprises hydroxyl, aminyl,  $(C_1-C_{12})$ hydroxylalkyl,  $(C_1-C_{12})$ aminylalkyl, or hydroxyalkyloxy, and  $R_{15}$  is a halogen.

Claim 8 (Currently Amended): A photoresist comprising a compound with a photoinitiator joined to a hydrophilic carrier component, the hydrophilic carrier component comprises a monomer, oligomer, polymer, plasticizer or surfactant.

Claim 9 (Original): The photoresist of claim 8, wherein the photoinitiator comprises an imidazole dimer, a benzophenone, an acetaphenone, an anthraquinone, naphthaquinone, a triazine-based compound, or mixtures thereof.

Claim 10 (Original): The photoresist of claim 9, wherein the photoinitiator is an imidazole dimer having the formula:



where  $R_{13}$ ,  $R_{14}$  and  $R_{15}$  are the same or different and comprise hydrogen, unsubstituted or substituted alkyl, unsubstituted or substituted aryl, alkoxy, aryloxy, hydroxyl, aminyl,

carboxyl, ester, thio, isocyanate,  $-N(CH_2-OCH_3)_2$ , hydroxyalkyloxy or alkylthio with the proviso that at least one of  $R_{13}$ ,  $R_{14}$  or  $R_{15}$  is a reactive group which may undergo an addition or condensation reaction with a reactive group of the carrier component to join the imidazole dimer to the carrier component, and  $R_{15}$  may also be a halogen.

Claim 11 (Original): The photoresist of claim 10, wherein  $R_{13}$  or  $R_{14}$  comprises hydroxyl, aminyl,  $(C_1 \text{ to } C_{12})$ hydroxyalkyl,  $(C_1 \text{ to } C_{12})$ aminylalkyl, or hydroxyalkyloxy, and  $R_{15}$  is a halogen.

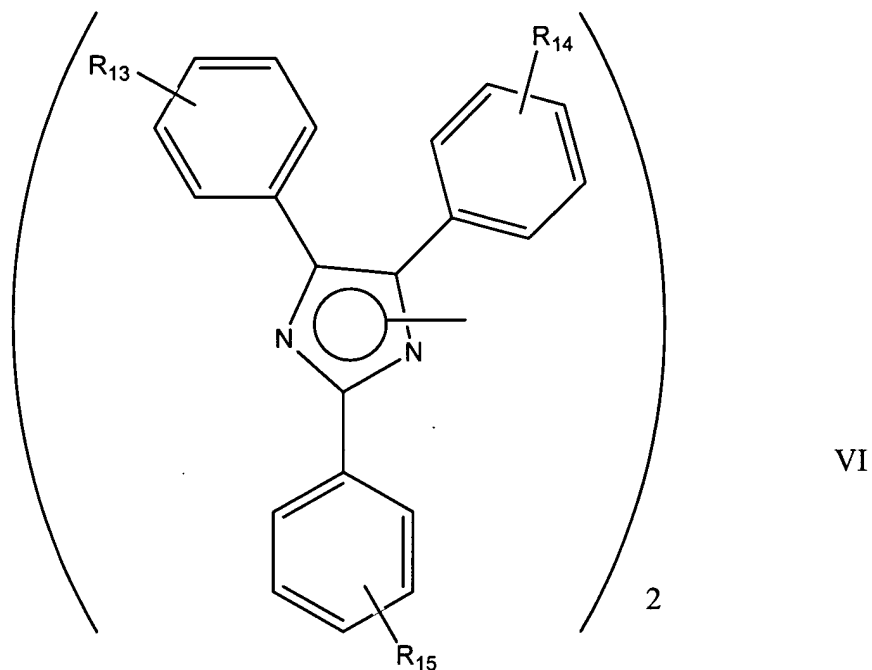
Claim 12 (Original): The photoresist of claim 8, further comprising plasticizers, rheology modifiers, dyes, fillers, film forming agents, strip enhancers, or mixtures thereof.

Claim 13 (Currently Amended): A method of forming a pattern on a substrate comprising:

- a) disposing on a substrate a photoresist composition with a hydrophilic carrier component bonded to a photoinitiator component, the hydrophilic carrier component comprises a monomer, oligomer, polymer, plasticizer or surfactant;
- b) imaging the photoresist; and
- c) developing the photoresist

Claim 14 (Original): The method of claim 13, wherein the photoinitiator component comprises an imidazole dimer, a benzophenone, an acetophenone, an anthraquinone, a naphthaquinone, a triazine-based compound, or mixtures thereof.

Claim 15 (Original): The method of claim 14, wherein the imidazole dimer has a general formula:



where  $R_{13}$ ,  $R_{14}$  and  $R_{15}$  are the same or different and comprise hydrogen, unsubstituted or substituted alkyl, unsubstituted or substituted aryl, alkoxy, aryloxy, hydroxyl, aminyl, carboxyl, ester, thio, isocyanate,  $-N(CH_2OCH_3)_2$ , hydroxyalkyloxy or alkylthio with the proviso that at least one of  $R_{13}$ ,  $R_{14}$  or  $R_{15}$  is a reactive group which may undergo an addition or condensation reaction with a reactive group of the carrier component to join the imidazole dimer to the carrier component, and  $R_{15}$  also may be a halogen.

Claim 16 (Original): The method of claim 15, wherein  $R_{13}$  or  $R_{14}$  comprises hydroxyl, aminyl,  $(C_1 \text{ to } C_{12})$ hydroxyalkyl,  $(C_1 \text{ to } C_{12})$ aminylalkyl, or hydroxyalkyloxy, and  $R_{15}$  is a halogen.

Claim 17 (Currently Amended): The method of claim ~~12~~13, wherein the substrate is a printed wiring board.